

WE CLAIM:

- 1) An energy meter for monitoring and controlling the distribution of electrical energy, said meter comprising:
 - at least one sensor coupled with an electric circuit and operative to sense at least one electrical parameter in said electric circuit and generate at least one analog signal indicative thereof;
 - at least one analog to digital converter coupled with said sensor and operative to convert said analog signal to at least one first digital signal;
 - a communications port operative to facilitate communications of at least one second digital signal between said energy meter and a slave device coupled with said energy meter using a first protocol;
 - a processor coupled with said analog to digital converter and further coupled with said communications port, said processor operative to perform a power management function on said at least one second digital signal and generate an output result; and
 - a server module coupled with said processor and operative to facilitate communication of said output result to a client application over a digital network using a second protocol.
- 2) The energy meter of claim 1 wherein said first protocol comprises a master protocol.
- 3) The energy meter of claim 2 wherein said master protocol comprises the Modbus RTU protocol.

- 4) The energy meter of claim 2 wherein said master protocol comprises ION protocol.
- 5) The energy meter of claim 2 wherein said master protocol comprises distributed networking protocol ("DNP").
- 6) The energy meter of claim 1 wherein said second protocol comprises a hyper text transfer protocol ("HTTP") based protocol.
- 7) The energy meter of claim 6 wherein said HTTP based protocol comprises hypertext markup language ("HTML").
- 8) The energy meter of claim 6 wherein said HTTP based protocol comprises extensible markup language ("XML").
- 9) The energy meter of claim 6 wherein said HTTP based protocol comprises simple mail transport protocol ("SMTP").
- 10) The energy meter of claim 1 wherein said first protocol and said second protocol comprise substantially similar protocols.
- 11) The energy meter of claim 1 wherein said digital network comprises an Ethernet network.
- 12) The energy meter of claim 1 wherein said digital network comprises a wireless network.
- 13) The energy meter of claim 1 wherein said energy meter comprises at least one object oriented program module.
- 14) The energy meter of claim 1 wherein said meter is operative to request first digital data from said slave device, said slave device operative to provide said first digital data upon request.
- 15) The energy meter of claim 13 wherein said meter is further operative to request second digital data from at least a second slave device coupled with

said meter, said second slave device being operative to provide said second digital data upon request.

16)The energy meter of claim 1 wherein said at least one second digital signal comprises digital data generated by said slave device.

17)A system for monitoring and controlling the distribution of electrical energy in an electric circuit, said system comprising:

- (a) a first digital network comprising a first protocol;
- (b) a second digital network comprising a second protocol different from said first protocol;
- (c) a first slave device coupled with said first digital network, said first slave device operative to facilitate communication of digital data onto said first digital network using said first protocol;
- (d) a master device coupled with said first digital network and said second digital network and further comprising:
 - (i) at least one sensor coupled with said electric circuit and operative to sense at least one electrical parameter in said electric circuit and generate at least one analog signal indicative thereof;
 - (ii) at least one analog to digital converter coupled with said sensor and operative to convert said at least one analog signal to a digital signal representative thereof;
 - (iii) a communications port operative to couple said master device with said first digital network and to facilitate

receipt of said digital data from said first digital network using said first protocol;

(iv) a processor coupled with said analog to digital converter and further coupled with said communications port, said processor operative to perform a power management function on said digital data and generate an output result therefrom; and

(v) a server module coupled with said processor and operative to facilitate communication of said output result over said second digital network using said second protocol.

- 18) The system of claim 17 further comprising a second slave device coupled with said first digital network and further operative to communicate with said master device using said first protocol.
- 19) The system of claim 18 wherein said master device receives a plurality of said digital data from both said first slave device and said second slave device, said processor operative to perform said power management function on said digital data and generate said output result.
- 20) The system of claim 17 wherein said power management function comprises generating an alarm message.
- 21) The system of claim 17 wherein said power management function comprises generating a load shedding command.
- 22) The system of claim 17 wherein said power management function comprises generating a power factor control command.
- 23) The system of claim 17 wherein said first slave device comprises an energy meter.

- 24)The system of claim 17 further wherein said first slave device facilitates communication of said digital data in response to a request from said master device.
- 25)The system of claim 17 wherein said first slave device is further coupled with a load, said slave device operative to at least one of monitor and control said load.
- 26)A system for monitoring and controlling the distribution of electrical energy in an electric circuit, said system comprising:
- (a) a digital network;
 - (b) a master device and a slave device each coupled with said digital network and each further comprising:
 - (i) at least one sensor coupled with said electric circuit and operative to sense at least one electrical parameter in said electric circuit and generate at least one analog signal indicative thereof;
 - (ii) at least one analog to digital converter coupled with said sensors and operative to convert said at least one analog signal to digital data representative thereof;
 - (iii) a communications port coupled with said analog to digital converter and operative to facilitate communication of said digital data onto said digital network;
 - (iv) a processor coupled with said analog to digital converter, said processor operative to perform a function on said digital data and generate an output result;

wherein said master device further comprises a server module coupled with said processor of said master device and operative to facilitate communication of said output result on a second digital network using a first protocol, said first protocol comprising an open protocol.

27)The system of claim 26 wherein said master device comprises a revenue meter.

28)The system of claim 26 wherein said master device is operative to communicate with a plurality of slave devices.

29)The system of claim 26 wherein said master device is operative to communicate with a plurality of slave devices using an RS232 protocol.

30)The system of claim 25 wherein said master device is operative to communicate with a plurality of slave devices using an RS485 protocol.

31)The system of claim 26 wherein said slave device facilitates communication using a second protocol, said second protocol different from said first protocol, further wherein said second protocol comprising a closed protocol.

32)The system of claim 31 wherein said closed protocol comprises Modbus RTU protocol.

33)The system of claim 31 wherein said closed protocol comprises ION protocol.

34)The system of claim 31 wherein said closed protocol comprises DNP.

35)The system of claim 26 wherein said open protocol comprises a HTTP based protocol.

36)The system of claim 35 wherein said HTTP based protocol comprises XML.

37)The system of claim 35 wherein said HTTP based protocol comprises HTML.

38)The system of claim 35 wherein said HTTP based protocol comprises SMTP.

- 39)The system of claim 26 wherein said master device is operative to export said output result to a third device.
- 40)The system of claim 39 wherein said third device is operative to perform a power management function on said digital data.
- 41)The system of claim 40 wherein said power management function comprises an aggregation function.
- 42)The system of claim 40 wherein said power management function comprises a billing function.
- 43)The system of claim 40 wherein said power management function comprises a protection function.
- 44)The system of claim 40 wherein said power management function comprises a control function.
- 45) The system of claim 26 wherein said first digital network is coupled with said second digital network.
- 46)A method for monitoring and controlling the distribution of electrical energy in an electric circuit, said method comprising:
- (a) computing a first data value in a slave device coupled with a first network, said first network implementing a master protocol;
 - (b) transmitting said first data value to a master device from said slave device over said first network;
 - (c) receiving said first data value by said master device;
 - (d) receiving at least one analog parameter from a power distribution network coupled with said master device;
 - (e) performing at least one power management function on said first data value and generating a result; and

- (f) providing said result to a client application coupled with a second network, said second network implementing an internet protocol.
- 47) The method of claim 46, wherein (a) further comprises receiving a command via said first network from a master device coupled with said first network.
- 48) The method of claim 46, wherein (b) is in response to a said command.